

**SYLLABUS BIFURCATION  
SESSION 2024-2025**

**CLASS – XI**

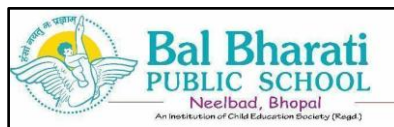
**SUBJECT: MATHEMATICS**

Month	Chapter Name	No. of Days Required	Sub-topics	Curriculum Mapping	Learning Outcomes
April	CH-1 Sets	22	Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations). Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement.	Drawing venn diagram	Learning about how same thinking makes things in one form.
May	CH-2 Relations & Functions	11	Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions, with their graphs.  Sum, difference, product and quotients of functions.	Drawing graphs of different functions	Finding Domain and range of function
June	CH-3 Trigonometric Functions	9	Domain and range of trigonometric functions and their graphs. Expressing $\sin(x \pm y)$ and $\cos(x \pm y)$ in terms of $\sin x$ , $\sin y$ , $\cos x$ & $\cos y$ and their simple applications. Deducing identities like		Basic concepts of trigonometric functions which is used in real life

			<p>the following: <math>\tan(x \pm y) = \frac{\tan x \pm \tan y}{1 \mp \tan x \tan y}</math>, <math>\cot(x \pm y) = \frac{\cot x \cot y \mp 1}{\cot x \pm \cot y}</math></p> <p><math>\sin(\alpha \pm \beta) = \sin \alpha \cos \beta \pm \cos \alpha \sin \beta</math></p> <p><math>\cos(\alpha \pm \beta) = \cos \alpha \cos \beta \mp \sin \alpha \sin \beta</math></p> <p><math>\sin 2x = 2 \sin x \cos x</math></p> <p><math>\cos 2x = \cos^2 x - \sin^2 x = 2 \cos^2 x - 1 = 1 - 2 \sin^2 x</math></p> <p><math>\tan 2x = \frac{2 \tan x}{1 - \tan^2 x}</math></p> <p><math>\sin 3x = 3 \sin x - 4 \sin^3 x</math></p> <p><math>\cos 3x = 4 \cos^3 x - 3 \cos x</math></p> <p><math>\tan 3x = \frac{3 \tan x - \tan^3 x}{1 - 3 \tan^2 x}</math></p> <p>Identities related to <math>\sin 2x</math>, <math>\cos 2x</math>, <math>\tan 2x</math>, <math>\sin 3x</math>, <math>\cos 3x</math> and <math>\tan 3x</math>.</p>		
July	<p>CH-4 Complex Numbers and Quadratic Equations</p> <p>CH-5 Linear Inequalities</p>	25	<p>. Need for complex numbers, especially <math>\sqrt{-1}</math>, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane</p> <p>Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line.</p>		Learning more about numbers
August	<p>CH-6 Permutations and Combinations</p>	23	<p>Fundamental principle of counting. Factorial <math>n</math>. <math>(n!)</math> Permutations and combinations, derivation of Formulae for <math>nPr</math> and <math>nCr</math> and their connections, simple applications.</p>		Finding numbers of ways of writing words
September	<p>CH-7 Binomial Theorem</p>	22	<p>Historical perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications.</p> <p>Sequence and Series. Arithmetic Mean</p>	Drawing Pascal's Tree	

	<p>CH-8 Sequence and Series</p> <p>CH-9 Straight Lines</p>		<p>(A.M.) Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M.</p> <p>Brief recall of two dimensional geometry from earlier classes. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point -slope form, slope-intercept form, two-point form, intercept form, Distance of a point from a line.</p>		<p>How to find slope of any object moving in medium</p>
October	<p>CH-10 Conic Sections</p> <p>CH-11 Introduction to Three-dimensional Geometry</p> <p>CH-12 Limits and Derivatives</p>	<b>20</b>	<p>Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.</p> <p>Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points.</p> <p>Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition of derivative relate it to</p>	<p>Drawing and making physical octants</p>	<p>Learning about to find area of different objects</p> <p>Learning first principle method to find derivative</p>

			scope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.		
November	CH-12 Statistics  CH-13 Probability	<b>22</b>	Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data.  Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events.		How to find actual mean and median
December	<b>Revision</b>	<b>21</b>			
January	<b>Revision</b>	<b>21</b>			
February	<b>Revision</b>	<b>21</b>			



**SYLLABUS BIFURCATION  
SESSION 2024-2025**

**CLASS – XI**

**SUBJECT: BIOLOGY**

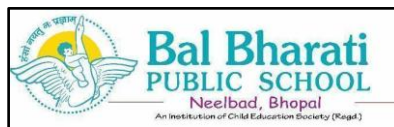
Month	Chapter Name	No. of Days Required	Sub-topics	Curriculum Mapping	Learning Outcomes
April	What is Living,  Biological Classification  Plant Kingdom	20	Biodiversity, Three domains of life, Binomial Nomenclature  Two Kingdom, Five Kingdom classification, details of Kingdom Monera, Protista and Fungi.  Algae and its types, Bryophytes and its types, Gymnosperms - life cycles.	* To arrange all division of plant kingdom in flow chart * Parts of a compound microscope.  *.Study of slides of :Bacteria, Rhizopus, Yeast  Study of slides of :Oscillatoria, Spirogyra, Mushroom, Liverwort, Moss, Fern, Pinus, monocot, dicot and lichen.	To develop skills to relate evolution and classification.  To give technique to learn classification in a simple way  To help them in developing ideas about primitive cells and the advanced organisms evolved. To analyses the types of biodiversity in kingdom Plantae and to make a record.
May	Animal Kingdom	12	Salient features and classification of animals, non-chordates up to phyla level and chordates upto class level.	To observe slides under microscope and note the observation of -Amoeba, Hydra, Liverfluke, Ascaris	To analyses the types of biodiversity in kingdom Animalia and to make a record.
June	Morphology of Flowering Plants	7	Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of family	Dissection of flowers to understand floral description and floral formula. Family: Solanaceae	To develop the skill of making diagrams of Flowers. Floral Diagram and Floral Formula of

			Solanaceae		Family Solanaceae
July	Anatomy of Flowering Plants	8	Anatomy and functions of tissue systems in dicots and monocots	Study of tissues, diversity in shapes, sizes of plant and animal cells , collenchyma, parenchyma, sclerenchyma, xylem and phloem , Squamous epithelium	Handles laboratory tools, and apparatuses, instruments and devices properly for performing activities/ experiments/ investigations such as; uses microscope for observing internal structure of transverse section of root, stem and leaves
	Structural Organisation in Animals	5	Morphology, Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of frog.	Prepare the sketch of frog showing the organ systems	Explains efficient systems, relationships, processes and phenomena such as; organ systems in frog.
	Cell – The Unit of Life	8	Cell as basic structural and functional unit of life, difference between prokaryote/eukaryote, Cell membrane, and cell organelles like mitochondria, plastids, chloroplast and nucleus	Interactive discussion on discovery of cell, osmosis, plasmolysis and comparison between prokaryotic and Eukaryotic cell. Making diagrams of plant cell animal cell with visualization of organelles structure and their function	To understand the cell as a basic structural and functional unit of life. To analyses and draw structure and function of different cell organelles.
August	Biomolecules	8	Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, and nucleic acids; Enzyme - types, properties, enzyme action.	To test the presence of carbohydrate, proteins and fats in a given food sample	*To study different Biomolecules, their structure and function. Draws labelled diagrams, flow charts, concept maps, graphs and diagrams. Communicates the findings and conclusions effectively.

	Cell Cycle and Cell Division	6	Cell cycle, mitosis, meiosis and their significance	To make the model of mitosis and meiosis.  To observe Slides of different stages of mitosis and meiosis	*To comprehend the new terms and process of cell division To understand the steps and phases of Mitosis and Meiosis *Applies scientific concepts and draws stages of Mitosis & Meiosis and correlates with real life.
September	Photosynthesis in Higher Plants	10	Steps of photosynthesis, Light and dark reaction, Role of chlorophyll, Cyclic and noncyclic photophosphorylation, Calvin Cycle, Hatch and Slack Cycle, Photorespiration, Factors.	To draw the cyclic processes in photosynthesis	To Comprehend new terms and cycles pertaining to Photosystems I & II
	Respiration in Plants	6	Glycolysis, TCA cycle Fermentation, Aerobic respiration,	To study the rate of respiration in flower buds / leaves / germinating seeds.	To analyze the steps of metabolic enzymes mediated cycles of respiration
October	Respiration in Plants	4	ETS and oxidative phosphorylation, and RQ values.	Pair and Share with Peer teaching methods	Understand the importance of formation of proton gradient and breakdown of proton gradient for ATP formation.
	Plant - Growth and Development	6	Plant growth Regulators and growth inhibitor	Interactive Discussion and Reasoning Questionnaire	To understand the role of Auxin, Gibberellin, Cytokinin, Ethylene, ABA in Plant growth and development
November	Chapter-17: Breathing	6	Cellular Respiration, Respiratory Organs, Respiratory Volume	Pair and share with Peer teaching methods	To comprehend the mechanism of breathing,

	and Exchange of Gases  Chapter-18: Body Fluids and Circulation	6	Disorders  Blood and Lymph Cardiac cycle & regulation of cardiac activity	Physical activity to understand the rate of cardiac activity	Calculate respiratory Quotient.  To understand hypertension, CAD, Angina pectoris Cardiac arrest, heart failure.
December	Excretory Products and their Elimination	6	Modes of Excretion, Human excretory system, Kidney function and disorders. Elimination	To test the presence of Sugar in Urine To test the presence of Albumin in Urine.	To analyze regulation of kidney function- Renin-angiotensin, Atrial natriuretic factor, ADH.
	Locomotion and Movement	8	Skeletal muscles, Muscle contraction	Sports Integrated Activity Yoga and Muscle Contraction and Relaxation	To understand the Sliding filament theory of muscle contraction in humans
January	Neural Control and Coordination	8	Nervous system in humans, CNS, PNS & ANS ,nerve impulse.	Prepare Mind maps Case Studies Pair and Share with Self assessment methods	Name and describe functions of the nervous system. define key terms, like neurons and motor functions. demonstrate knowledge of the nervous system
	Chemical Coordination and Integration	8	Endocrine Glands hormones and Their functions with disorders.	Case study on some hormonal disorders	To analyze the role of hormones in human body, their importance and feed back mechanism of control
February	Revision for Annual Exams				
March	Annual Exams				





**SYLLABUS BIFURCATION  
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**CLASS – XI**

**SUBJECT: PHYSICS**

Month	Chapter Name	No. of Days Required	Sub-topics	Curriculum Mapping	Learning Outcomes
April	CH-1 Units and measurements	22	Physical quantities, Fundamental and derived quantities and their units, dimensions and their applications with Significant figures and their rules with applications	1. How the different units of same physical quantities are related. 2. Applications of units for export import purposes.  • Understand the various systems of units • What is the utility of different units • Why different systems are introduced * Understand the systems of units in India and in other countries. * To understand the meaning of dimensional formula	Students will learn the various systems of units, the relation between different units of different systems, the concept of scalar and vector quantities. Physical quantities and their measurements, applications of dimensions. Students will learn <ul style="list-style-type: none"> <li>● To differentiate between one dimension, two dimension and three dimensional motion .</li> <li>● The concept of uniform, non uniform and accelerated motion.</li> <li>● The concept of average speed, instantaneous speed .</li> <li>● The difference between speed and velocity .</li> </ul>
May	CH -2 Kinematics (Motion in a Straight line)	11	kinematics Frame of reference, Motion in a straight line: Position-time graph, speed and velocity.	Apply the concept instantaneous and average velocity during non-uniform motion and in the	Students learn the applications of velocity-time and position-time

			Elementary concepts of differentiation and integration for describing motion. Uniform and non-uniform motion, average speed and instantaneous velocity. Uniformly accelerated motion, velocity time and position time graphs. Relations for uniformly accelerated motion (graphical treatment).	speedometer. ● Apply the concept of max range of a ball in a match and with the same effort a sportsman can increase the range of his shot if he hit the ball at an angle of 45 degree	graphs and their numerical.  Understand the difference between one dimension, two dimension and three dimensional motion
June	CH-3 Kinematics (Motion in a Plane)	09	Vectors/ Basic mathematical concepts Scalar and vector quantities; Position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors. Unit vector; Resolution of a vector in a plane - rectangular components. Scalar and Vector product of vectors.	1. Apply the concept of cross product in calculating the area of a parallelogram after finding the magnitude of cross product.  2. Apply the concept in finding the direction of torque when we open a screw with the help of lever arm.  <b>Lab Activities</b> To determination of diameters of spherical/cylindrical objects by using vernier calipers.	1. Understand the concept of dot and cross product of two vectors.  2. Understand the triangle, polygon and parallelogram laws of vector addition.
July	CH-4 Laws of Motion	25  <b>(Revision for PT-1 Exam)</b>	Projectile motion with trajectory, Uniform circular motion, Angular velocity, angular acceleration, centripetal force and acceleration.  Laws of Motion - force (balanced and unbalanced force) and motion, Newton's laws and its applications, inertia, momentum, Impulse, law of conservation of linear momentum. Connected pulleys and elevator problems.	● Apply the inertia of rest and motion like when a person standing in a bus falls backward when the bus starts moving suddenly. ● analyze the concept of Newton's laws in daily actions like when a fielder pulls his hand backward; while catching a cricket ball.  *Apply the concept of impulse and momentum in cricket or any	● Understand the difference between balanced and unbalanced forces. ● Understand the concept of force. ● Understand the concept of inertia and its types.  ● Understand the keys of Newton's laws.  ● Formulate Newton's

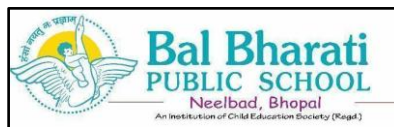
				game during a collision.	<p>second law of motion.</p> <ul style="list-style-type: none"> <li>● Understand the concept of momentum.</li> </ul> <p>Understand the concept of Scalar Product, Work Done By Constant Force And Variable Force</p> <ul style="list-style-type: none"> <li>● Understand the concept of kinetic energy, work energy theorem and power.</li> <li>● State the work energy theorem.</li> <li>● Understand the concept of potential energy .</li> </ul> <p><b>LAB ACTIVITIES</b></p> <ol style="list-style-type: none"> <li>1. To Determination of diameters of wire and thickness of plane sheet by using screw gauge.</li> <li>2. To Determination of radius of curvature of spherical lenses by using a spherometer.</li> </ol>
August	CH -5 Work, Energy and Power	23  <b>(Revision For Mid-Term Exam)</b>	Work done by a constant force and variable force, kinetic energy, work energy theorem, power. Notion of potential energy, potential energy of a spring, conservative forces, conservation of mechanical energy, non-conservative forces, elastic and inelastic collisions in one and two dimensions.	Using C.D. and ring moment of inertia and centre of mass will be demonstrated.  Classroom Activities By demonstrating the activity using spring balance and bob the potential energy stored in an object will be explained.	<p>Understand the concept of center of mass.</p> <p>Understand the concept of a vector product of vectors.</p> <p>Understand the concept of equilibrium.</p> <p>Understand the concept of</p>

	CH-6 System of Particles and Rotational Motion		<p>Centre of mass and Rotational Motion and centre of mass of two-particle system, momentum</p> <p>conservation and centre of mass motion, centre of mass of rigid body, centre of mass of uniform rod. Vector product of vectors, moment of force, torque, angular momentum, conservation of angular momentum with some examples. Equilibrium of rigid bodies, comparison of linear and rotational motion, moment of inertia and radius of gyration. Values of moments of inertia for simple geometrical object .</p>	<p><b>Lab Activities</b></p> <ul style="list-style-type: none"> <li>• Velocity of a ball on an incline plane.</li> <li>• Velocity of pendulum when it passes through mean position and extreme position during oscillations.</li> </ul>	<p>torque, angular momentum.</p> <p>To understand the concept of moment of inertia of different shapes.</p>
September	CH-7 Gravitation  CH-8 Mechanical properties of solids	22	<p>Gravitation Kepler's laws of planetary motion. The universal law of gravitation, Acceleration due to gravity and its variation with altitude and depth, gravitational potential energy, gravitational potential, Escape velocity, critical velocity, orbital velocity of a satellite.</p> <p>Properties of Matter: 1.Solids- Elastic behavior of solids, stress, strain, elastic limit, Hook's law, Modulus of elasticity, potential energy in a stretched wire, poisson's ratio, thermal stress</p>	<p>By the law of gravitation when body thrown up finally falls down towards the earth Therefore we have to be down to earth. Importance of Kepler's law to understand the orbital velocity and gravitational force.</p> <ol style="list-style-type: none"> <li>1. Determination of acceleration due to gravity by simple pendulum</li> <li>2. Using pendulum of different masses ,verification of laws of time period -</li> </ol>	<ol style="list-style-type: none"> <li>1. Understand orbital and escape velocity. State the Newton's law of gravitation and Kepler's law of planetary motion</li> <li>2. Understand to differentiate gravity and gravitation.</li> <li>3. Understand concept of acceleration due to gravity.</li> <li>4. Understand how to differentiate gravitational potential and gravitational potential energy.</li> <li>5. Understand the concept</li> </ol>



November	CH-11 Thermodynamics          CH-12 Kinetic Theory of Gases	22  <b>(Revision For PT-II Exam)</b>	<p>Thermal equilibrium, Zeroth law of thermodynamics, thermodynamic state variables and equation of state, indicator diagram or p-v diagram, isothermal change, Adiabatic change, slopes and work done of isothermal and adiabatic changes, isobaric and isochoric changes, first law of thermodynamics, Applications of the first law ,cyclic and non-cyclic process.</p> <p>Gasses - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equipartition of energy (statement only) and application to specific heat capacities of gasses; concept of mean free path.</p>	<p><b>Lab Activity</b></p> <p>To Verification of Newton’s law of cooling by using a calorimeter.</p>	<p>1.Understand the concept thermal equilibrium</p> <p>2.Understand the terms thermodynamic variables State Zeroth law, first law, second law, of thermodynamics</p> <p>3.Understand various process of thermodynamics</p>
December	CH-13 Oscillation	21	<p>Periodic motion - time period, frequency, displacement as a function of time. Periodic functions. Simple harmonic motion (S.H.M) and its equation; phase; oscillations of a spring– restoring force and force constant; energy in S.H.M. Kinetic and potential energies; Simple pendulum– derivation of expression for its time period.</p>	<p><b>Lab activities</b></p> <ul style="list-style-type: none"> <li>• Concept of periodic motion and oscillations with the help of simple pendulum.</li> </ul>	<p>1. Understand the concept of Periodic motion.</p> <p>2. Understand the terms time period, frequency, displacement as a function of time.</p>
January	CH-14 Waves	21	Wave motion. Transverse and longitudinal waves, speed of	•Formation of stationary waves by sonometer Formation of stationary	* Understand Wave motion. Transverse and longitudinal

			<p>wave motion. Displacement relation for a progressive wave. Principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, Beats.</p>	<p>waves by resonance column</p>	<p>waves, speed of wave motion. Displacement relation.</p> <ul style="list-style-type: none"> <li>• For a progressive wave. Principle of superposition of waves, reflection of waves, standing</li> <li>• Understanding Principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, Beats.</li> </ul>
February	<b>(Annual Practical Exam &amp; Revision for Annual Exam)</b>	21	-----	-----	-----
March	<b>(Annual Exam Commences from 03/03/24)</b>	22	-----	-----	-----



**SYLLABUS BIFURCATION  
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**CLASS – XI**

**SUBJECT: CHEMISTRY**

Month	Chapter Name	No. of Days Required	Sub-topics	Curriculum Mapping	Learning Outcomes
April	<b>Unit-I Some basic concepts of chemistry</b>	12	General Introduction: Importance and scope of Chemistry. Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules. Atomic and molecular masses, molarity, mole fraction, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.	.To Prepare 0.1M Oxalic acid Solution.  Demonstrating how to use laboratory equipment such as balances, burettes, and pipettes for precise measurements.  Explanation of Laws of chemical combination with numericals through IIP using link: <a href="https://edurev.in/t/92415/Laws-of-Chemical-Combinations">https://edurev.in/t/92415/Laws-of-Chemical-Combinations</a>	Students will be able to grasp fundamental concepts such as the mole concept and stoichiometry for quantitative analysis of chemical reactions.  Develop skills in balancing chemical equations and calculating quantities of reactants and products.
	<b>Unit-2 Structure of atom</b>	10	Atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and De Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d-orbitals, rules for filling electrons in	Create atomic model diagrams illustrating the structure of atoms, including the arrangement of protons, neutrons, and electrons within the nucleus and electron shells.(Activity)	Understand the historical development of atomic theory from Dalton to Bohr, including the contributions of key scientists.  Apply knowledge of atomic structure to explain periodic trends, chemical bonding, and spectral lines, laying the groundwork for more

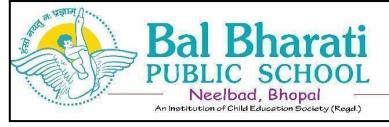


			orbitals - Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals.		advanced topics in chemistry.
May	<b>Unit-3 Classification of elements and periodicity in properties</b>	11	Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii.	Determination of one anion (Acidic radical) and one cation (Basic radical) in a given salt.(Practical)  Students engage in activities such as constructing periodic tables using physical and chemical properties of elements. (Activity)	Students will be able to understand the periodic table's organization and trends in elemental properties. They learn to predict elements' chemical behavior based on their positions in the periodic table.
June	<b>Unit-3 Classification of elements and periodicity in properties</b>	09	Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100.	Explanation of Mendeleev and Modern Periodic table through IIP using link: <a href="https://www.youtube.com/watch?v=y5yY5x017X0">https://www.youtube.com/watch?v=y5yY5x017X0</a>	-----
July	<b>Unit-4 Chemical bonding and molecular structure</b>	25 <b>(Revision for PT-1 Exam)</b>	Valence electrons, ionic bond, covalent bond, bond parameters. Lewis's structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory. Hydrogen bond. Concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea only),	To determine the strength of the given Sodium Hydroxide solution. Provided is M/20 Oxalic acid solution.(Practical)  Student will prepare a chart for different types of Hybridization, Structure of molecules, Bond angle, geometry and Examples(Activity) (PT-1 Commences from 01/07/24 and concludes on 08/07/24)	Students will be able to comprehend the types of chemical bonds, including covalent, ionic, and metallic bonding, and their formation principles.  They learn about molecular geometry, hybridization, and bond polarity, enabling them to predict molecular shapes and properties.
August	<b>Unit-05 Chemical thermodynamics</b>	23 <b>(Revision For Mid-</b>	Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive	----- <b>(Mid Term Exam Commences</b>	Students will be able to understand concepts such as energy, entropy, and

		<b>Term Exam)</b>	properties, state functions. First law of thermodynamics -internal energy and enthalpy, heat capacity and capacity and specific heat, measurement of $\Delta U$ and $\Delta H$ , Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction) Introduction of entropy as a state function, Gibb's energy change for spontaneous and non- spontaneous processes, criteria for equilibrium. Third law of thermodynamics (brief introduction)	<b>from 23/08/24 and concludes on 09/09/24)</b>	enthalpy changes in chemical reactions.  They will be able to learn to apply thermodynamic principles to predict the feasibility and spontaneity of reactions.
September	<b>Unit-6 Chemical Equilibrium</b>	22	Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium – Le Chatelier’s principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, hydrolysis of salts (elementary idea), buffer solution, Henderson Equation, solubility product, common ion effect (with illustrative examples)	Students will analyze real-world scenarios and industrial processes affected by chemical equilibrium, fostering critical thinking and problem-solving skills.	Students will be able to understand the concept of dynamic equilibrium and learn to apply Le-Chatelier's principle to predict and explain shifts in equilibrium in response to changes in concentration, pressure, and temperature.
October	<b>Unit-7 Redox reaction</b>	20	Concept of Oxidation and Reduction reactions, Oxidation Number, Balancing redox reactions,	To Perform and Understand the process of corrosion and rancidity and their method of Prevention.	Students will be able to understand oxidation-reduction processes and how

			in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions.	Calculation of Oxidation number and Balancing of chemical reactions through IIP using Google Link: <a href="https://www.youtube.com/watch?v=PRqCI03c5QE&amp;t=40s">https://www.youtube.com/watch?v=PRqCI03c5QE&amp;t=40s</a>	to balance redox equations. They will learn to identify oxidizing and reducing agents and comprehend the role of electron transfer in chemical reactions.
November	<b>Unit-8 Organic chemistry -some basic principles and techniques</b>	22 <b>(Revision For PT-II Exam)</b>	General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.	Activities like organic compound or different color identification using techniques such as chromatography.	Students will be able to grasp the fundamental concepts of organic chemistry, including the structure and properties of organic compounds.  They will learn about nomenclature, isomerism, and methods of purification and characterization of organic compounds.
December	<b>UNIT-9 HYDROCARBONS</b>	21	Classification of Hydrocarbons Aliphatic Hydrocarbons: Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis. Alkenes- Nomenclature, the structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of	Detection of Functional group in a given Organic compound.  <b>(PT-II Exam Commences from 16/12/24 and concludes on 24/12/24)</b>  Explanation of Nomenclature of Organic chemistry through IIP using link: <a href="https://www.youtube.com/watch?v=GYq9cQ3H4FU">https://www.youtube.com/watch?v=GYq9cQ3H4FU</a>	Students will be able to understand the properties, nomenclature, and classification of hydrocarbons.  They will learn about various types of hydrocarbons, including alkanes, alkenes, alkynes, and aromatic compounds, and their reactions.

			electrophilic addition. Alkynes - Nomenclature, the structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water.		
January	<b>Aromatic Hydrocarbons:</b>	21	Aromatic Hydrocarbons: Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of functional group in monosubstituted benzene. Carcinogenicity and toxicity.	-----	-----
February	<b>(Annual Practical Exam &amp; Revision for Annual Exam)</b>	<b>21</b>	<b>(Annual Practical Exam &amp; Revision for Annual Exam)</b>	-----	-----
March	<b>(Annual Exam Commences from 03/03/24)</b>	<b>22</b>	<b>(Annual Exam Commences from 03/03/24)</b>	-----	-----



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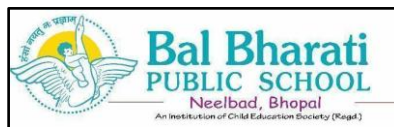
**CLASS – XI**

**SUBJECT: HINDI**

Month	Chapter Name	No. of Days Required	Curriculum Mapping	Learning Outcomes
APRIL	(गद्य)1- नमक का दारोगा	6	सत्य की विजय पर कहानी कहना। <a href="https://youtu.be/zY-KzITfCRA?si=HUzLDEex54N2wGfG">https://youtu.be/zY-KzITfCRA?si=HUzLDEex54N2wGfG</a>	धर्म तथा सत्य की हमेशा जीत होती है।
	(काव्य)1- कबीर	4	कबीर के पदों का गायन।	ईश्वर एक है। धर्म में आडंबर दिखाना नहीं।
	(गद्य)2- मियाँ नसीरुद्दीन	5	अपने हुनर का परिचय।	प्रत्येक काम एक कला है।
	जनसंचार माध्यम और लेखन) 1. जनसंचार माध्यम और लेखन	7		जनसंचार माध्यमों का ज्ञान।
MAY	वितान) पाठ-1 भारतीय गायिकाओं में बेजोड़ : लता मंगेशकर	4	लता मंगेशकर के जीवन पर आधारित परियोजना कार्य।	लता मंगेशकर की अभूतपुर गायकी की बारीकियों का ज्ञान।
	(काव्य ) 2. मीरा	3	मीरा के पदों का गायन।	मीरा की भक्ति भावना।
	जनसंचार माध्यम और लेखन) 2. पत्रकारिता के विविध आयाम	4	<a href="https://youtu.be/a-HaUyDP0Ko?si=ERbQjpbz9J4dyfjg">https://youtu.be/a-HaUyDP0Ko?si=ERbQjpbz9J4dyfjg</a>	पत्रकारिता से परिचय।
JUNE	गद्य) 3- अपू के साथ ढाई साल	5	निर्देशक सत्यजित राय की किसी फिल्म की समीक्षा कीजिए।	फिल्म निर्माण की प्रक्रिया का ज्ञान।
	( काव्य) 3. घर की याद	4	कविता पाठ।	जेल प्रवास के दौरान कवि की मानसिक दशा तथा परिवार के प्रति प्रेम की भावना।
JULY	( गद्य ) 4- विदाई संभाषण	5	बंगाल विभाजन पर आलेख लिखिए।	गवर्नर लॉर्ड कर्जन की नीतियों का परिचय।
	(काव्य) 4. चंपा काले काले अक्षर नहीं चीन्हती	4	जल संरक्षण को सचित्र दर्शाएँ तथा नारा लेखन कीजिए।	साक्षरता का महत्व बताना। राजस्थान की मरुभूमि में जल का महत्व।

	(वितान) 2- राजस्थान की रजत बूंदे (गद्य) 5. गलता लोहा (काव्य) 5. गजल	5 6 5	राजस्थान की भौगोलिक स्थिति को दर्शाते हुए पानी पर महत्व पर आलेख लिखिए।  गलता लोहा कहानी की पटकथा लिखिए।	कार्य की कुशलता जाति के आधार पर नहीं।  कवि की क्रांतिकारी आवाज।
<b>AUGUST</b>	(जनसंचार माध्यम और लेखन) 3. डायरी लिखने की कला 4. कथा - पटकथा (गद्य) 6. रजनी	5 5 6	'रजनी' नाटक का मंचन।	लेखन क्षमता का विकास  संघर्ष करने की क्षमता का विकास
<b>SEPTEMBER</b>	14. कार्यालय लेखन और प्रक्रिया 15. स्ववृत्त लेखन  (काव्य) 6. अक्क महादेवी (गद्य) 7- जामून का पेड़	5 5 5 7	अपना बायोडाटा बनाइए।  अक्क महादेवी की मीरा से समानता कीजिए।  जामून का पेड़ पाठ का मंचन।	लेखन क्षमता का विकास  तपस्या तथा ईश्वर भक्ति के मार्ग का ज्ञान।  सरकारी कार्यालय की कार्यप्रणाली।
<b>OCTOBER</b>	(काव्य) 7- सबसे खतरनाक  ( काव्य ) 8. आओ मिलकर बचाएँ ( सृजनात्मक लेखन) नए और अप्रत्याशित विषयों पर लेखन		वृक्षारोपण करना।	समाज समाज में निराशा तथा बुराइयों के विपरीत आवाज उठाना। प्रकृति को बचाने का संदेश।  लेखन क्षमता का विकास
<b>NOVEMBER</b>	(गद्य) 8.भारत माता  (वितान)3. आलो आंधारि		मानचित्र पर भारत के अलग-अलग हिस्सों की भाषा को दर्शाना। पाठ की लेखिका बेबी हलदार का जीवन परिचय लिखना ।	भारत की संस्कृति का परिचय। जीवन एक संघर्ष है।
<b>DECEMBER</b>	16. कोश - एक परिचयों			
<b>JANUARY</b>	पुनरावृत्ति			
<b>FEBRUARY</b>	पुनरावृत्ति			

<b>MARCH</b>	वाषिक परीक्षा			



**SYLLABUS BIFURCATION  
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**CLASS – XI**

**SUBJECT: PHYSICAL EDUCATION**

Month	Chapter Name	No. of Days Required	Sub-topics	Curriculum Mapping	Learning Outcomes
April	Unit 1 : Changing Trends and Careers in Physical Education	22	Meaning and Definition of Physical Education  Aims and Objectives of Physical Education  Career Options in Physical Education  Competitions in Various Sports at National and International Level  Khelo India Programme	<b>The class will be divided into groups . each group will be asked to relevant the physical with other subjects and talk about different types of activities in the Olympics (like rules and regulations are different games.)</b> <b>Also teacher will explain the various career or profession in physical education and which all institutions are running these physical education courses in India.</b>	After completing this chapter, Students will be able to: Recognize the concept of Physical Education. identify the aims and objectives of Physical Education. explore different career options in the field of Physical Education. classify various sports competitions at National and International level. understand Khelo India Programme
May	Unit II: Olympic Value Education	11	Olympic, Paralympics and Special Olympics  Olympic Symbols, Ideals, Objectives & Values of Olympism  International Olympic Committee  Indian Olympic Association	<b>Teacher make groups and make student to seat in the groups then make group discussion about modern Olympic and ancient Olympic which one is better but before that teacher will explain about both the Olympics in detail.and also various sports awards given in India with different examples related to the sports awards.</b> <b>Teacher also explain about the organizations who control the sports events in country or in the world like</b>	After completing this chapter, Students will be able to: Differentiate between Modern and Ancient Olympic Games, Paralympics and Special Olympic games. identify the Olympic Symbols and Ideals. incorporate values of Olympism in your life. describe the role, responsibilities and functioning of IOC and IOA.

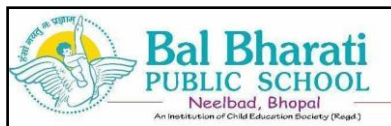


				IOC and IOA	
June	Unit III: Physical Fitness, Wellness & Lifestyle	09	<p>Meaning &amp; importance of Physical Fitness, Wellness &amp; Lifestyle</p> <p>Components of Physical Fitness and Wellness</p> <p>Components of Health-related Fitness</p>	<p><b>Group discussion about different health problems which we see nearby us.(cardiac problem, hypertension, Diabetes, asthma etc.</b></p>	<p>After completing this chapter, Students will be able to: Describe concept of a healthy life style.explain wellness and its importance and define the components of wellness.classify Physical Fitness and recognise its importance in life. distinguish between.skill-related and health-related components of physical fitness.</p>
July	Unit IV :Physical Education and Sports for Children with Special Needs Unit V :Yoga	25	<p>Aims and objectives of Adaptive Physical Education</p> <p>Organization promoting Adaptive Sports (Special Olympics Bharat; Paralympics; Deaflympics)</p> <p>Concept of Inclusion, its need and Implementation</p> <p>Role of various professionals for children with special needs (Counselor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist and Special Educator)</p> <p>Meaning &amp; Importance of Yoga</p> <p>Elements of Yoga</p> <p>Introduction- Asanas, Pranayamas, Meditation &amp; Yogic Kriyas</p> <p>Yoga for concentration &amp; related asanas (Sukhasana, Tadasana,</p>	<p><b>Teacher take student on ground and select 2 or 3 students to perform asana as they are instructed to perform after their command. Then the teacher explain various asana will students are performing at the same time .</b></p> <p><b>Teacher also explain various therapeutic effects of yoga . and history of yoga in India.</b></p>	<p>After completing this chapter, Students will be able to: Identify the factors that affect access to physical activity for CWSN.recognize the need of Physical Education and sports for CWSN.outline and describe the aim and objectives of Adapted Physical Education.distinguish the role of Paralympics, Special Olympics and Deaflympics describe concept of inclusion, need of inclusion and it implementation.explain strategies for increasing access and participation in sports.identify different professionals, their role and services for CWSN recognize the concept of yoga and aware with the importance of it . identify the elements of yoga.identify the Asanas, Pranayamas, meditation and yogic kriyas.classify various yogic activities for</p>

			Padmasana, and Shashankasana, Naukasana, Vrikshasan, Garudasana)  Relaxation Techniques for improving concentration-Yog-nidra.		enhancement of concentration .know about relaxation techniques for improving concentration
August	Unit VI : Physical Education and Leadership Training	23	Leadership Qualities and Role of a leader.  Creating leaders through Physical Education.  Meaning, Objectives and types of Adventure Sports (Rock climbing, trekking, River Rafting, Mountaineering, Surfing and Para Gliding)  Safety measures to prevent sports injuries	<b>Teacher explain the different types of physical activity and which types of environment is needed. They create a small adventure activity on the ground and explain the detailed things about the safety measures and importances of the physical activities and physical activities. Teacher make different groups to perform the same task by these they can learn the qualities of leadership also .</b>	After completing this chapter, Students will be able to: Recall definitions of leadership. list the qualities of a leader.understand adventure sports.recognize and classify sports injuries.demonstrate injury management.apply safety measures
September	Unit VII : Test and Measurement in Sports	22	Define Test, Measurement & Evaluation  Importance of Test, Measurement & Evaluation in Sports  Calculation of BMI & Waist – Hip Ratio  Somato Types (Endomorphy, Mesomorphy & Ectomorphy)  Measurement of health related fitness	<b>Student will take a BMI test of any 10 student and identify the student category in which they belong to. And by these teacher explain the whole process of the text and also the body types of students in which body types belong to .</b>	After completing this chapter, Students will be able to: Define the terms test, measurement, and evaluation, differentiate norm- and criterion-referenced standards, differentiate formative and summative evaluation, discuss the importance of measurement an evaluation processes, understand BMI: A popular clinical standard and its computation differentiate between Endomorphy, Mesomorphy & Ectomorph describe the procedure of measurement of health related fitness
October	Unit VIII :	20	Definition and importance of Anatomy, Physiology and	<b>Organized physical activity for student and explain them the</b>	After completing this chapter, Students will be able to:

	Fundamental of Anatomy, Physiology and Kinesiology in Sports		<p>Kinesiology.</p> <p>Functions of Skeletal System, Classification of Bones and Types Joints.</p> <p>Properties and Functions of Muscles.</p> <p>Structure and Functions of Respiratory System and Circulatory System.</p> <p>Equilibrium: Dynamic and Static and Centre of Gravity and its application in Sports.</p>	<p><b>involvement of various body parts ,how they work together in an activity and effects on internal body organ like circulatory system,respiratory system. And also about the causes and symptoms of second wind and oxygen debt.</b></p>	<p>Identify the importance of anatomy, physiology and kinesiology.</p> <p>recognize the main functions of the skeleton.</p> <p>understand the functions of bones and identify various types of joints.</p> <p>figure out the properties and functions of muscles and understand how they work.</p> <p>understand the anatomy of the respiratory system and describe its working.</p> <p>identify and analyze the layout and functions of the Circulatory System.</p> <p>articulate and demonstrate the concept and application of equilibrium and center of gravity insports.</p>
November	Unit IX : Psychology and Sports	22	<p>Definition &amp; Importance of Psychology in Physical Education &amp; Sports.</p> <p>Define &amp; Differentiate between Growth &amp; Development</p> <p>Developmental characteristics at Different Stage of Growth and Development</p> <p>Adolescent Problems &amp; their Management</p>	<p><b>Teacher explain the importance of psychology and how it increasing the performance in sports and techniques used in psychology to make the best selection. In this chapter learn also learn the growth and development and different stages of it and what type of changes come in the life during this period of growth and what type of management skill are their</b></p>	<p>After completing this chapter, Students will be able to:</p> <p>Identify the role of Psychology in Physical Education and sports.</p> <p>correlate the psychological concepts with the sports and athlete specific situations.</p> <p>differentiate characteristics of growth and development at different stages.</p> <p>determine the issues related to adolescent behaviour.</p> <p>recognise different management strategies for adolescent relate dissues</p>
December	Unit X : Training and Doping in Sports	21	<p>Meaning and Concept of Sports Training</p>	<p><b>Teacher will explain the meaning and causes of doping and various types of doping that can be</b></p>	<p>After completing this chapter, Students will be able to:</p> <p>Identify the need of training in</p>

			Principles of Sports Training Warming up & Limbering Down Skill, Technique & Style Concept and Classification of Doping Prohibited Substances and their Side Effects Dealing with alcohol and Substance Abuse	<b>used by athletes to enhance performance and its adverse side effects over health .</b>	sports.Recount principles of sports training.Explain the significance of warming up and cooling down.Differentiate between skill, technique and style.Identify doping and types of doping.Recognize side effects of prohibited substances.Recognize the effect of alcohol abuse and substance on sports performance
January	<b>REVISION</b>	21			
February	<b>REVISION</b>	<b>21</b>			
March		<b>22</b>			



**SYLLABUS BIFURCATION  
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**CLASS – XI**

**SUBJECT: INFORMATICS PRACTICES**

Month	Chapter Name	No. of Days Required	Sub-topics	Curriculum Mapping	Learning Outcomes
APRIL	<b>Unit 1: Introduction to Computer System</b>	8	<p>1. Introduction to computer and computing:</p> <p><b>2-evolution of computing devices:</b> components of a computer system and their interconnections, Input/output devices.</p> <p><b>3-Computer Memory:</b> Units of memory types of memory – primary and secondary data deletion its recovery and related security concerns.</p> <p><b>4-Software:</b> purpose and types – system and application software, generic and specific purpose software.</p>	Draw Block Diagram of Computer Define the Input and Output/ input Devices	<ul style="list-style-type: none"> <li>Identify the components of computer system. And their working.</li> </ul>
MAY	<b>Unit 2: Introduction to Python</b>		<p><b>1-Basics of Python</b> programming, Python interpreter - interactive and script mode, the structure</p>	Install the python IDLE or Jupiter Create a program to get name ans surname of the user and then print the complete name Write a code to get two numbers and add the numbers	<ul style="list-style-type: none"> <li>Create Python programs using different data types, lists and dictionaries.</li> </ul>

			<p>of a program, <b>2-indentation</b>, identifiers, keywords, constants, variables, types of operators, precedence of operators,</p> <p><b>3-data types</b>, mutable and immutable data types, statements, expressions, evaluation and comments, input and output statements,</p> <p><b>4-data type conversion</b>,</p> <p><b>debugging.</b></p> <p><b>5-Control Statements:</b> if-else, if-elif-else, while loop, for loop</p> <p>Lists: list operations - creating,</p> <p><b>6-initializing</b>, traversing and manipulating lists, list methods and built-in functions – len(),list(),append(),insert(), count(),index(),remove(), pop(), reverse(), sort(), min(),max(),sum()</p> <p><b>7-Dictionary:</b> concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions – dict(), len(), keys(), values(), items(), update(), del(), clear()</p>		<ul style="list-style-type: none"> <li>● Use the different operators in Python and see the results on how the operations are done for different datatypes</li> </ul>
JUNE	<b>Ch-3 Python Fundamentals</b>	7	<ul style="list-style-type: none"> <li>● Introduction</li> <li>● Python Character Set</li> <li>● Token <ul style="list-style-type: none"> <li>● Keywords</li> <li>● Identifiers</li> <li>● Literals/values</li> <li>● Operators</li> </ul> </li> </ul>	<p>Q1. Write a program that display a joke .but display the punch line only when the user presses enter key .</p>	<p>Students will learn:-</p> <ul style="list-style-type: none"> <li>● Python Character Set</li> <li>● Token <ul style="list-style-type: none"> <li>● Keywords</li> <li>● Identifiers</li> <li>● Literals/values</li> </ul> </li> </ul>

			<ul style="list-style-type: none"> <li>• punctuators</li> <li>• Barebones of a Python Program</li> <li>• Variables and Assignments <ul style="list-style-type: none"> <li>• Creating a Variable</li> <li>• Multiple Assignments</li> <li>• Variable Definition</li> <li>• Dynamic Typing</li> </ul> </li> <li>• Simple Input and Output <ul style="list-style-type: none"> <li>• Reading Numbers</li> <li>• Output Through print() Function</li> </ul> </li> </ul>	<p>Q2. Write a program to read today `s data from user. Then display how many days are left in the current month .</p> <p>Q3. Write a program that generates the following out put: 5 10 9 Assign value 5 to a variable using assignment operator (=) multiply it with 2 to generate 10 and subtract 1 to generate 9.</p> <p>Q4. Modify the above program so as to print output as 5@10@9.</p> <p>Q5. Write the program with a maximum three line of code and that assign first five multiples of number to 5 variable and then` print them .</p>	<ul style="list-style-type: none"> <li>• Operators</li> <li>• punctuators</li> <li>• Barebones of a Python Program</li> <li>• Variables and Assignments <ul style="list-style-type: none"> <li>• Creating a Variable</li> <li>• Multiple Assignments</li> <li>• Variable Definition</li> <li>• Dynamic Typing</li> </ul> </li> </ul>
JULY	<b>Ch-4 Data Handling Intoduction</b>	25	<ul style="list-style-type: none"> <li>• Data Types <ul style="list-style-type: none"> <li>• Numbers</li> <li>• Strings</li> <li>• Lists and Tuples</li> <li>• Dictionary</li> </ul> </li> <li>• Mutable and Immutable Types <ul style="list-style-type: none"> <li>• Variable Internals</li> </ul> </li> <li>• Operators <ul style="list-style-type: none"> <li>• Arithmetic Operators</li> <li>• Relational Operators</li> <li>• Identity Operators</li> </ul> </li> </ul>	<p><u>Q1.</u> Write a program to obtain principal amount , rate of interest and time from user and compute simple interest .</p> <p><u>Q2.</u> Write a program to obtain temperature of 7 days (Monday....sunday) and then display average temperature of the week .</p> <p><u>Q3.</u> Write a program to obtain x, y, z from the</p>	<p>Students will learn:-</p> <ul style="list-style-type: none"> <li>• Data Types <ul style="list-style-type: none"> <li>• Numbers</li> <li>• Strings</li> <li>• Lists and Tuples</li> <li>• Dictionary</li> </ul> </li> <li>• Mutable and Immutable Types <ul style="list-style-type: none"> <li>• Variable Internals</li> </ul> </li> <li>• Operators <ul style="list-style-type: none"> <li>• Arithmetic Operators</li> <li>• Relational Operators</li> </ul> </li> </ul>

	<b>Ch-5 Flow of Control</b>		<ul style="list-style-type: none"> <li>• Logical Operators</li> <li>• Operator Precedence</li> <li>• Expressions <ul style="list-style-type: none"> <li>• Evaluating Expressions</li> <li>• Type casting</li> </ul> </li> <li>• Working with math Module of Python</li> <li>• debugging</li> <li>• Errors in a program</li>   <li>• Introduction</li> <li>• Types of Statements in Python</li> <li>• Statement Flow Control</li> <li>• The if Statements of Python <ul style="list-style-type: none"> <li>• The if Statement</li> <li>• The if-else Statement</li> <li>• The if-elif statement</li> <li>• The nested if statement</li> </ul> </li> <li>• Repetition of Tasks-A Necessity</li> <li>• The range() function</li> <li>• Iteration/Looping Statements <ul style="list-style-type: none"> <li>• The for loop</li> <li>• The while loop</li> </ul> </li> </ul>	<p>user and calculate expression: <math>4x^4 + 3y^3 + 9z + 6</math></p> <p>Q1. Write a python script that ask the user to enter a length in centimeters .if the user enters a negative length , the program should tell the user that the entry is invalid . otherwise ,the program should convert the length to inches and print out the result . there are 2.54 centimeters in an inch.</p> <p>Q2. A store charges RS 120 per item if you buy less than 10 items .if you buy between 10 and 99 items ,the cost is RS100 per item . if you buy more items , the cost is RS 70 the user how many items they are buying and print the total cost .</p> <p>Q3. Write a program to input length of three side of a triangle . then check if these side will form a triangle or not .</p> <p>Q1. Write a program to increment the elements of a list with a number.</p> <p>Q2. Write a program that reverses a list of integers (in place).</p> <p>Q 3. Write a program that input two lists and</p>	<ul style="list-style-type: none"> <li>• Identity Operators</li> <li>• Logical Operators</li> <li>• Operator Precedence</li> <li>• Expressions <ul style="list-style-type: none"> <li>• Evaluating Expressions</li> <li>• Type casting</li> </ul> </li> </ul> <p>Students will learn and use:-</p> <ul style="list-style-type: none"> <li>• Types of Statements in Python</li> <li>• Statement Flow Control</li> <li>• The if Statements of Python <ul style="list-style-type: none"> <li>• The if Statement</li> <li>• The if-else Statement</li> <li>• The if-elif statement</li> <li>• The nested if statement</li> </ul> </li> <li>• Repetition of Tasks-A Necessity</li> <li>• The range() function</li> <li>Iteration/Looping</li> </ul>
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	<b>Ch-6 List Manipuation</b>		<ul style="list-style-type: none"> <li>•</li> <li>• Introduction</li> <li>• Creating and accessing lists <ul style="list-style-type: none"> <li>• Creating lists</li> <li>• Accessing lists</li> </ul> </li> <li>• List operations <ul style="list-style-type: none"> <li>• Joining lists</li> <li>• Repeating or replicating lists</li> <li>• Slicing the lists</li> </ul> </li> <li>• Making True copy of a list</li> <li>• List functions and methods <ul style="list-style-type: none"> <li>• A list can contain lists as elements</li> </ul> </li> <li>• Working with lists (List Manipulation) <ul style="list-style-type: none"> <li>• Appending elements of a list</li> <li>• Inserting an element in a list</li> <li>• Modifying/updating elements to a list</li> <li>• Deleting an element from a list</li> </ul> </li> <li>Sorting a list</li> </ul>	create a third , that contains all elements of the first followed by all elements of the second .	<p>Students will be able for:</p> <ul style="list-style-type: none"> <li>• Creating and accessing lists <ul style="list-style-type: none"> <li>• Creating lists</li> <li>• Accessing lists</li> </ul> </li> <li>• List operations <ul style="list-style-type: none"> <li>• Joining lists</li> <li>• Repeating or replicating lists</li> <li>• Slicing the lists</li> </ul> </li> <li>• Making True copy of a list</li> <li>• List functions and methods <ul style="list-style-type: none"> <li>• A list can contain lists as elements</li> </ul> </li> <li>• Working with lists (List Manipulation)</li> </ul>
AUGUST	<b>Ch-7 Dictionaries</b>	23	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• Dictionary-Key:Value Pairs <ul style="list-style-type: none"> <li>• Creating dictionary</li> <li>• Accessing elements of a dictionary</li> </ul> </li> <li>• Characteristics of a</li> </ul>	<p>Q1. Write a program to enter names of employees and their salaries as input and store them in a dictionary.</p> <p>Q2. Write a program to count the number of times a character appears in a given string.</p>	<p>Students will learn:-</p> <ul style="list-style-type: none"> <li>• Dictionary-Key:Value Pairs <ul style="list-style-type: none"> <li>• Creating dictionary</li> <li>• Accessing elements of a dictionary</li> </ul> </li> </ul>

			<p>dictionary</p> <ul style="list-style-type: none"> <li>• Working with dictionaries</li> <li>• Multiple ways of creating dictionaries</li> <li>• Adding elements to dictionary</li> <li>• Updating/modifying existing elements in a dictionary</li> <li>• Deleting elements from a dictionary</li> <li>• Checking for existence of a key</li> <li>• Pretty printing a dictionary</li> <li>• Dictionary Functions and Methods</li> <li>• Get length of the dictionary-the len() functions</li> <li>• Creating new dictionary-the dict() function</li> <li>• Accessing items, keys and values-ger(), items(), keys(), values() methods</li> <li>• Extend/update dictionary with new key:value pairs: update() method</li> <li>• Deleting elements from dictionary- clear() and del</li> </ul>	<p>Q3. Write a program to convert a number entered by the user into its corresponding number in words.</p> <p>Q4. Repeatedly ask the user to enter a team name and how many games the team has won and how many they lost. Store this information in a dictionary where the keys are the team names and the values are list of the form [wins, losses].(a) Using the dictionary created above, allow the user to enter a team name and print out the team's winning percentage.(b) Using dictionary, create a list whose entries are the number of wins of each team.(c) Using the dictionary, create a list of all those teams that have winning records.</p>	<ul style="list-style-type: none"> <li>• Characteristics of a dictionary</li> <li>• Working with dictionaries</li> <li>• Multiple ways of creating dictionaries</li> <li>• Adding elements to dictionary</li> <li>• Updating/modifying existing elements in a dictionary</li> <li>• Deleting elements from a dictionary</li> <li>• Checking for existence of a key</li> </ul>
SEPTEMBER	<b>Ch-8 Database Concepts</b>	21	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• File based systems</li> <li>• Introducing Database Systems</li> <li>• Database Management System (DBMS)</li> <li>• Converting from file system</li> </ul>	<p>Q 1. Create the table Department table based on the following table instance chart.</p>	<p>Students will learn:-</p> <ul style="list-style-type: none"> <li>• Database Management System (DBMS)</li> <li>• Converting from file system to DBMS</li> <li>• DBMS key concepts</li> </ul>

- to DBMS
- DBMS key concepts
- Relational Database Model
- The Relational Model Terminology
  - Properties of a relation
  - Keys in Database
- Brief history of MySQL
- Starting MySQL
- MySQL and SQL
  - Processing Capabilities
- Classification of SQL Statements

Column Name	ID	Name
Data Type	NUMBER	VARCHAR
Length	8	25

Q 2. Populate the table Department with data from table dept. Including only required columns.

Column Name	Cust_ID	Cust_Name	Cust_Address1	Cust_Address2	Pincode	Cust_Phone
Datatype	NUMBER	VARCHAR	VARCHAR	VARCHAR	NUMBER	VARCHAR
Length	7	30	20	30	6	10

- Relational Database Model
- The Relational Model Terminology
  - Properties of a relation
  - Keys in Database
- Brief history of MySQL

OCTOBER

### Ch-9 Structured Query Language (SQL)

19

- Introduction
- Some MySQL SQL Elements
  - Literals
  - Data Type
  - Null Value
  - Comments
- SQL Command Syntax
- Databases in MySQL
  - Crating Databases
  - Opening Databases
  - Removing Databases
- Creating Tables
  - Data Integrity Through Constraints
- Inserting Data in Tables
  - INSERT INTO command
  - Inserting Data from Another Table
- Making simple select queries
  - Accessing Database
  - The SELECT Command
  - Selecting all columns

Q 1. Create the table Employee based un the following table instance chart.

Column Name	ID	First_Name	Last_Name	Dept_ID
Data Type	NUMBER	VARCHAR	VARCHAR	NUMBER
Length	8	25	25	8

Q 2. Create table Customer as per following Table Instance Chart.

- Students will learn:-
- SQL Command Syntax
  - Databases in MySQL
    - Crating Databases
    - Opening Databases
    - Removing Databases
  - Creating Tables
    - Data Integrity Through Constraints
  - Inserting Data in Tables
    - INSERT INTO command
    - Inserting Data from Another Table
  - Making simple select queries
    - Accessing Database
    - The SELECT Command
    - Selecting all columns
    - Reordering columns in

- Reordering columns in query results
- Eliminating redundant data (with keyword DISTINCT)
- Selecting from all the rows-all keyword
- How to perform simple calculations
- Scalar expressions with selected fields
- Using column aliases
- Handling Nulls
- Putting Text in the Query Output
- Selecting specific rows-Where clause
- Relational operators
- Logical operators
- Condition based on a range
- Condition based on a list
- Condition based on pattern matches
- Searching for NULL
- Operator precedence
- Sorting results-ORDER BY clause
- More DML Commands
  - Modifying Data with UPDATE command
  - Deleting Data with DELETE Command
- More DDL Commands
  - ALTER TABLE Command
  - The DROP Table Command

- query results
- Eliminating redundant data (with keyword DISTINCT)
  - Selecting from all the rows-all keyword
  - How to perform simple calculations

NOVEMBER	<b>Ch-10 Emrging Trends</b>	22	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• Artificial Intelligence <ul style="list-style-type: none"> <li>• Immersive Experience with Extended Reality (XR)</li> <li>• Machine Learning (ML)</li> <li>• Natural Language Processing (NLP)</li> </ul> </li> <li>• Robotics</li> <li>• Big Data <ul style="list-style-type: none"> <li>• Characteristics of Bif Data</li> <li>• Data Analytics</li> </ul> </li> <li>• Internet of Things (IoT) <ul style="list-style-type: none"> <li>• Web of Things (WoT)</li> <li>• Sensors</li> <li>• Smart Cities</li> </ul> </li> <li>• Cloud Computing</li> <li>• Grid Computing</li> <li>• Blockchain Technology <ul style="list-style-type: none"> <li>• Blockchain technology keyterms</li> <li>• How blockchain technology works</li> </ul> </li> </ul>	PPT on Emerging trends in IT	Students will learn:- <ul style="list-style-type: none"> <li>• Immersive Experience with Extended Reality (XR)</li> <li>• Machine Learning (ML)</li> <li>• Natural Language Processing (NLP)</li> <li>• Robotics</li> <li>• Big Data <ul style="list-style-type: none"> <li>• Characteristics of Bif Data</li> <li>• Data Analytics</li> </ul> </li> <li>• Internet of Things (IoT) <ul style="list-style-type: none"> <li>• Web of Things (WoT)</li> <li>• Sensors</li> <li>• Smart Cities</li> </ul> </li> <li>• Cloud Computing</li> <li>• Grid Computing</li> <li>• Blockchain Technology <ul style="list-style-type: none"> <li>• Blockchain technology keyterms</li> <li>• How blockchain technology works</li> </ul> </li> </ul>
DECEMBER	• Revision				
JANUARY	Revision and Final Practical Exam				
FEBRUARY	Annual Exam				
MARCH					